2018 INSTRUCTIONAL ANNUAL PROGRAM PLANNING WORKSHEET

CURRENT YEAR: 2017-2018 | **PROGRAM: COMPUTER INFORMATION SYSTEMS (CIS)**
CLUSTER: WED | **LAST YEAR CPPR COMPLETED: SPRING 2014**
NEXT SCHEDULED CPPR: 2018-2019 | **CURRENT DATE: SPRING 2018**

The Annual Program Planning Worksheet (APPW) is the process for:

- reviewing, analyzing and assessing programs on an annual basis
- documenting relevant program changes, trends, and plans for the upcoming year
- identifying program needs, if any, that will become part of the program's resource plan
- highlighting specific program accomplishments and updates since last year's APPW
- tracking progress on a Program Sustainability Plan if established previously.

Note: Degrees and/or certificates for the same program may be consolidated into one APPW.

This APPW encompasses the following degrees and/or certificates:
Click here to enter text.

GENERAL PROGRAM UPDATE

Describe significant changes, if any, to program mission, purpose or direction. *If there are not any, indicate: NONE.*
NONE.

PROGRAM SUSTAINABILITY PLAN UPDATE

Was a Program Sustainability Plan established in your program's most recent Comprehensive Program Plan and Review?

Yes ☐ If yes, please complete the Program Sustainability Plan Progress Report below.
No ☒ If no, you do not need to complete a Progress Report.

If you selected yes, please complete the Program Sustainability Plan Progress Report below after you complete the Data Analysis section. That data collection and analysis will help you to update, if necessary, your Program Sustainability Plan.

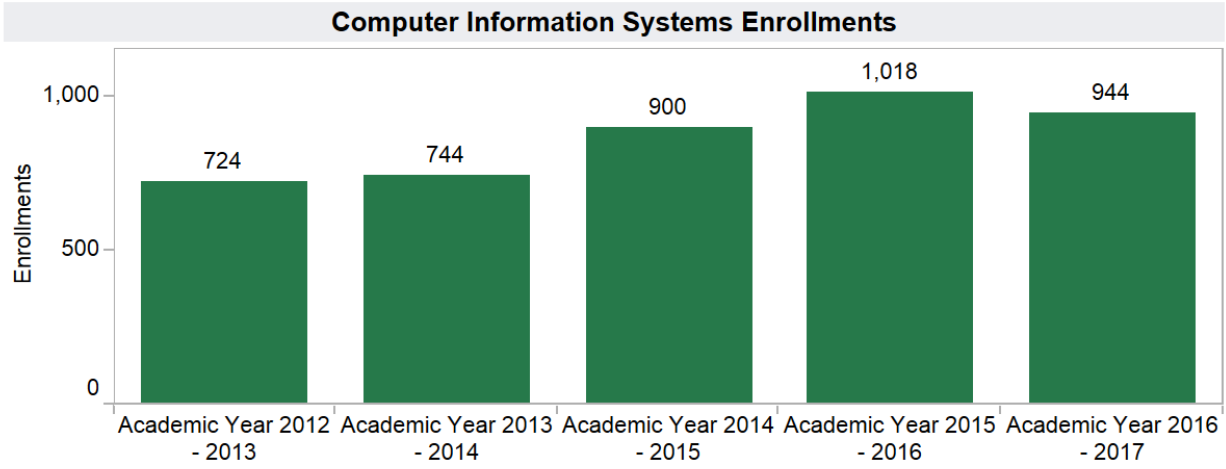
DATA ANALYSIS AND PROGRAM-SPECIFIC MEASUREMENTS

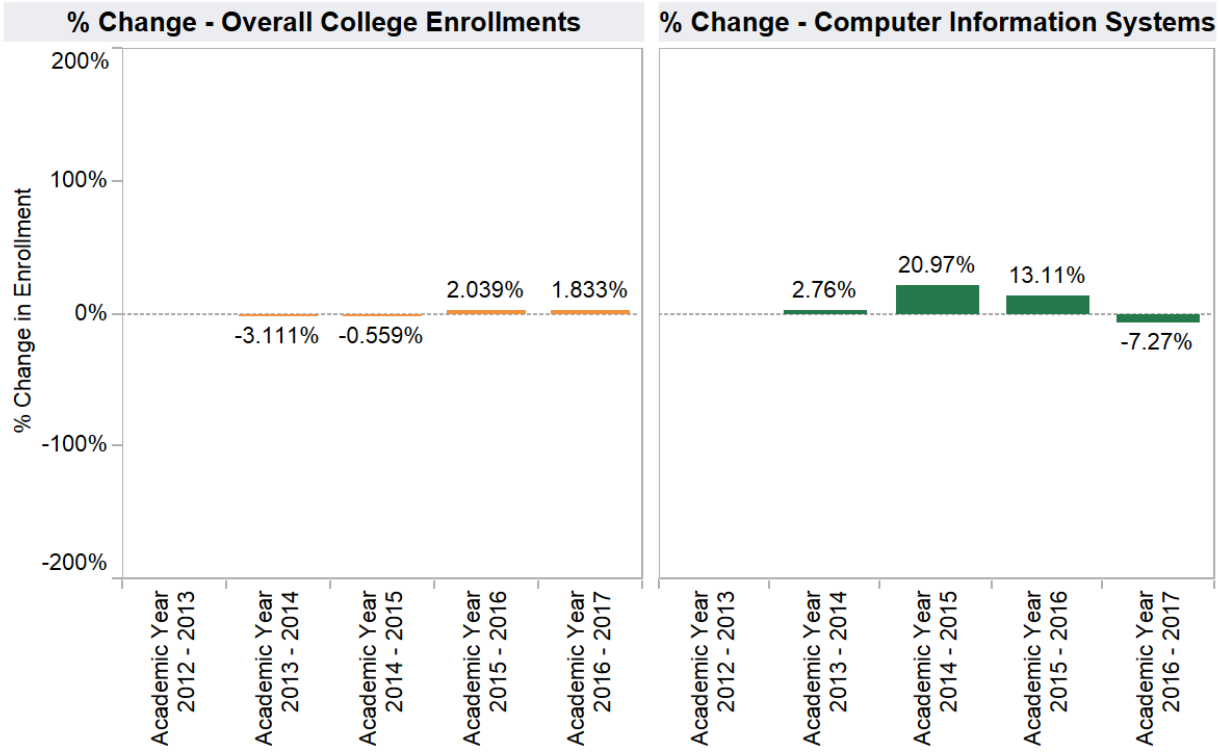
Your responses to the prompts for the data elements below should be for the entire program. If this APPW is for multiple degrees and/or certificates then you MAY want to comment on each degree and/or certificate, or discuss them holistically for the entire program being sure to highlight relevant trends for particular degrees and/or certificates, if necessary. Responses in this document need only reference the most recent year's available data.

General Enrollment (Insert Aggregated Data Chart)

SLOCCCD Program Review Data - Enrollment

Department:	Course:	Dual Enrollment:	Prison:
Computer Information Systems	All	All	All





Enrollment: Duplicated count of students who completed greater than 0 units in positive attendance courses or were present on census for all other accounting methods.

CIS has experienced strong growth most years, though as the college's overall enrollment has dropped, the cumulative effects of these reductions have been difficult to overcome. However, the program has been able to run counter to the overall college trend and increase enrollment most years.

In the past the limitations to growth have been largely administrative (only a certain number of sections were allowed to be added/offered, limited faculty available locally). As the 2014-15 numbers show, when sufficient sections can be scheduled and faculty is available to teach them, significant growth (over 20% over the previous year) is possible.

Even with that large of an increase, enrollment went up by double digits again the following year (2015-2016). The key difference that year was the addition of a Full-Time Temporary Instructor. This instructor also had Computer Science qualifications, which allowed the program to offer more core courses that are primarily handled by a single full-time instructor that holds those qualifications.

The following year (2016-17) had an inevitable decline with the departure of the Full-Time Temp instructor and the cancellation of a new permanent Full-Time Instructor position. The numbers were offset somewhat by the program's first year of Dual Enrollment at two local high schools.

On a more positive note, enrollment numbers for 2017-18 (as of 3/3/18, which do not yet show Dual Enrollment for Spring) show that the program's enrollment will grow to 1071 this year, a growth of over 13%. An additional high school joined for Dual Enrollment this year, with the potential to add one or two more for 2018-19.

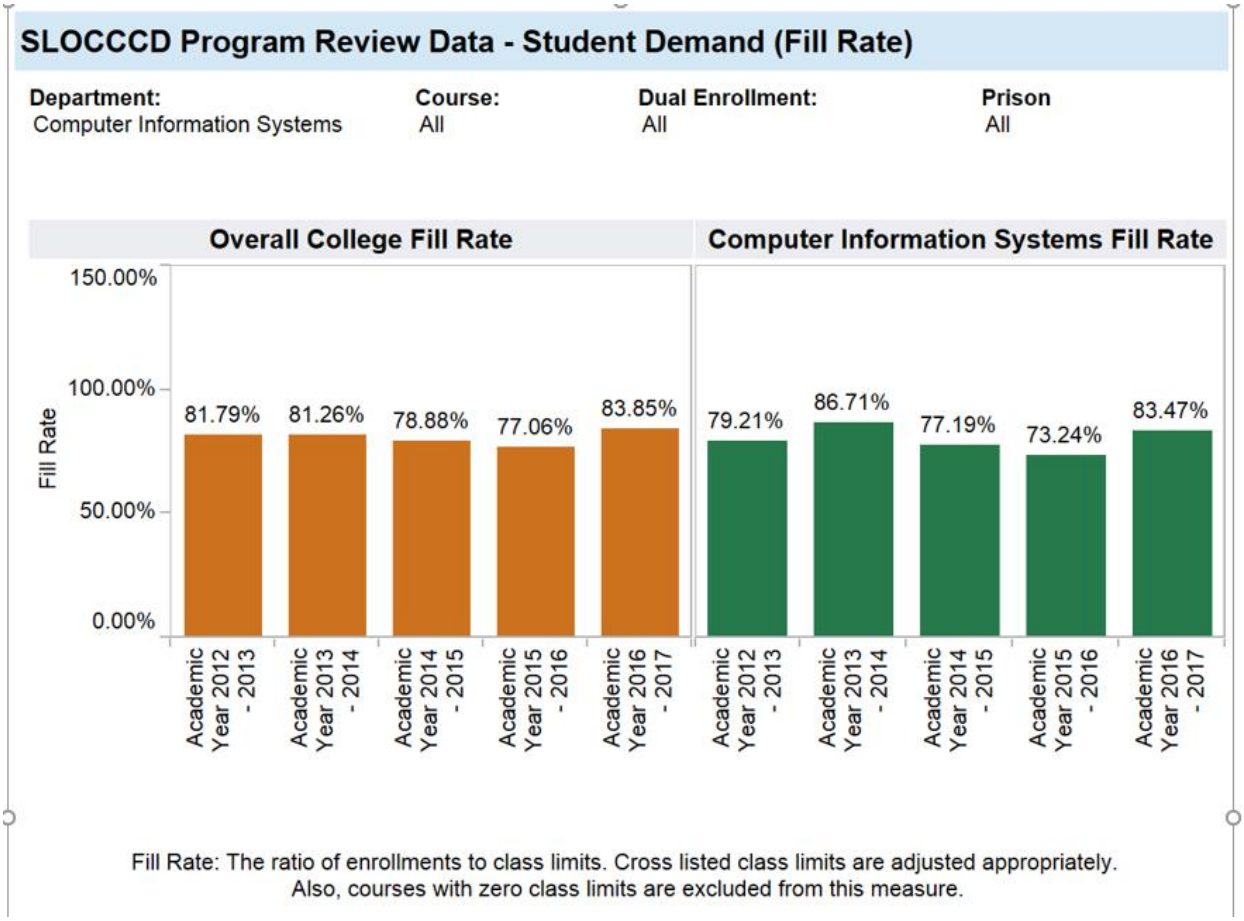
This represents double-digit growth in three of the past four years, with the outlying year impacted by the loss of a full-time instructor. The net increase in enrollment over this period will be at least 44% while overall college enrollment has been flat or down.

The program regularly struggles not with enrollment but with having enough qualified faculty. Retaining faculty is difficult given the low pay (especially compared to what potential faculty make in industry) and a low number of potential candidates who meet Computer Science qualifications. In addition, courses are more specialized and faculty are not as interchangeable as in some disciplines.

An article from last month cites the acute shortage of qualified faculty in the field, citing that there are currently five times as many openings as qualified faculty on the college level: http://www.centerdigitaled.com/blog/the-looming-capacity-crisis-in-computer-science-education.html

It will continue to be difficult to retain faculty as many better alternatives for candidates in our field exist. It is unlikely that anything short of a permanent full-time position will bring stability to the situation. Staffing concerns will be exacerbated starting in 2018-19 given the retirement of one of the program's two full-time faculty members.

General Student Demand (Fill Rate) (Insert Aggregated Data Chart)

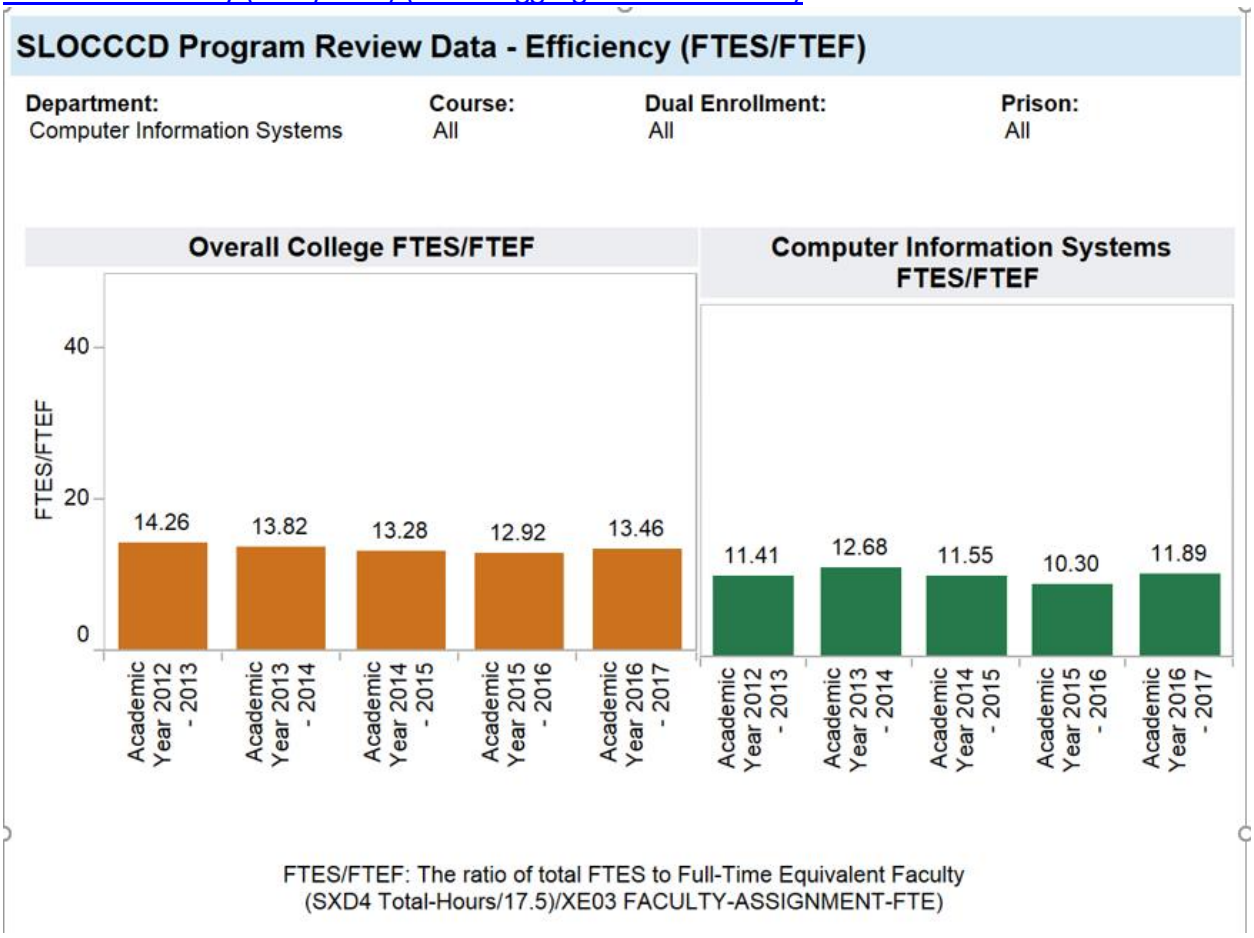


The CIS Fill rate has increased in 2016-17 and is effectively equal to the overall college rate. Scheduling for CIS is much more difficult than some programs as courses are more specialized and therefore not as easy to fill. Students entering the CIS program have a variety of objectives and we seek to meet as many of those as we can with the available faculty.

In the current year (2017-18) the program has been very efficient while growing. The program had a 101.3% of MaxFTES in Fall and is at 91.8% so far for Spring (Dual Enrollment numbers are not currently factored in.)

The course that does serve a lot of different audiences and serves as a "gateway" to the program is CIS 201. This course had a fill rate of 104.27% in 2016-17 and a similar number is expected for 2017-18.

General Efficiency (FTES/FTEF) (Insert Aggregated Data Chart)



Demand for CIS has increased though given the highly technical and individualized assessment involved it will never be able to compete with some programs on this score.

Numbers for this year show a 10.69 for Fall, though it appears the Dual Enrollment sections have a negative impact on this average. For Spring, without Dual Enrollment being factored in yet, the current number stands at 14.15.

Student Success—Course Modality (Insert Data Chart)

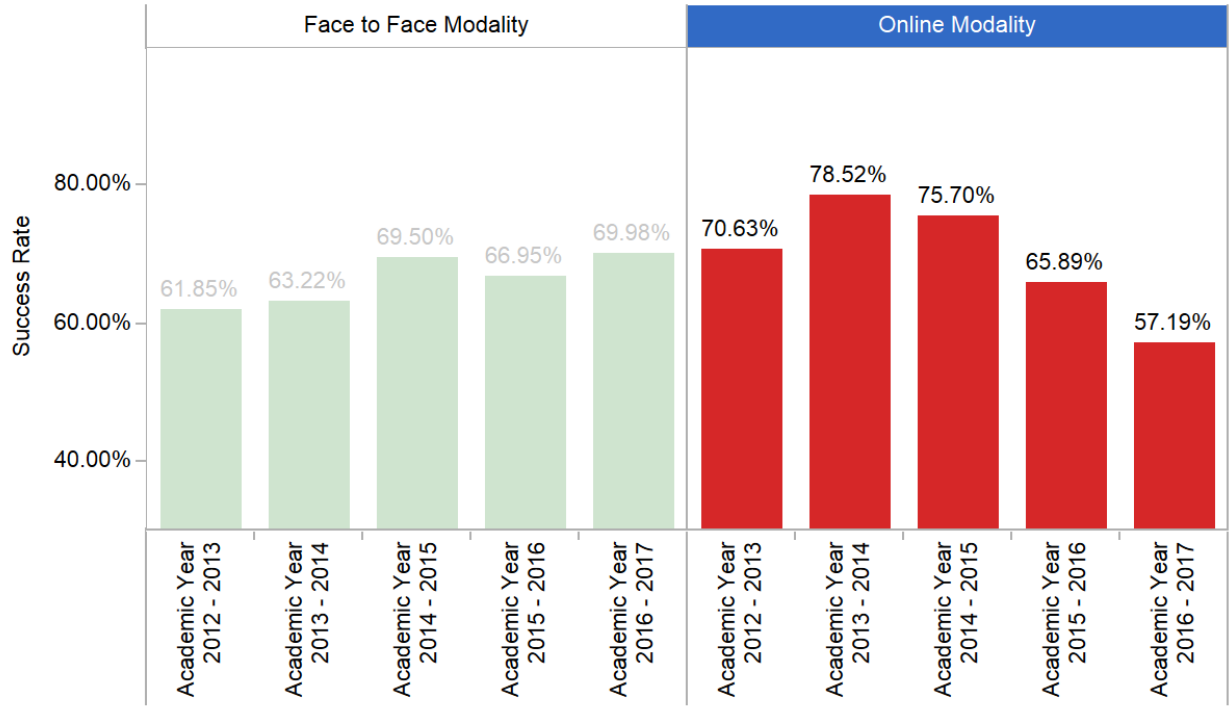
SLOCCCD Program Review Data: Successful Course Completion

Select Department:
Computer Information Systems

Course:
All

Legend:
Face to Face Modality
Online Modality

Successful Course Competion by Modality -Computer Information Systems



Successful Course Competion by Modality Table - Computer Information Systems

		Academic Year 2012 - 2013	Academic Year 2013 - 2014	Academic Year 2014 - 2015	Academic Year 2015 - 2016	Academic Year 2016 - 2017
Face to Face Modality	Department Success Rate	61.85%	63.22%	69.50%	66.95%	69.98%
	Total Department Enrollments	561.0	609.0	682.0	717.0	665.0
Online Modality	Department Success Rate	70.63%	78.52%	75.70%	65.89%	57.19%
	Total Department Enrollments	160.0	135.0	214.0	302.0	278.0

CIS is traditionally a very difficult field overall, which is why graduates are in such demand and faculty so difficult to find. Course completion in Face-to-Face has been consistent and has been growing despite the challenges in teaching such a demanding field, especially when few students have had courses in it prior to college.

CIS is also known for being a difficult subject to teach fully online. In fact, the Cal Poly Computer Science department will only teach courses in traditional modalities. However, there is great demand for the discipline and for online courses in general.

The program has been using hybrid sections for some time now to address this demand while also lessening the burden for students on the extremes of the district. Offering courses in North County has not been viable due to low enrollment though some experiments in South County are promising. These hybrid courses have generated strong enrollment numbers and are a regular part of the schedule.

The fully online sections in courses like CIS 201 (a first programming course) are very difficult for some and any programming class requires discipline and staying power to succeed. We have significant demand for this course in all modalities and will examine ways to increase retention while keeping the course at the appropriate level of rigor.

It may be necessary to offer more courses fully online due to external competitive factors and this situation is monitored regularly.

Degrees and Certificates Awarded (Insert Data Chart)

Program awards increased in part due to more students in core courses in 2015-16 with the presence of a full-time temp instructor. Program completion continues to be hindered by insufficient qualified instructors for the required courses for the A.S. degree. CIS has relied on qualified full-timers from CNET to teach some required courses for several years.

This past year we secured the services of the former Computer Science department chair at Cal Poly to teach a key required course since one of the “borrowed” instructors from the Engineering and Technology department was assigned other duties. We currently offer at least one section of all required courses every semester with the exception of CIS 240, which is taught by a CNET instructor who teaches it once a year.

The program also has the “good” challenge of demand in the field being so strong that some students secure employment (or transfer) before finishing the degree. Since the A.S. is a transitory degree in this field completion is not viewed as critical by employers and therefore students.

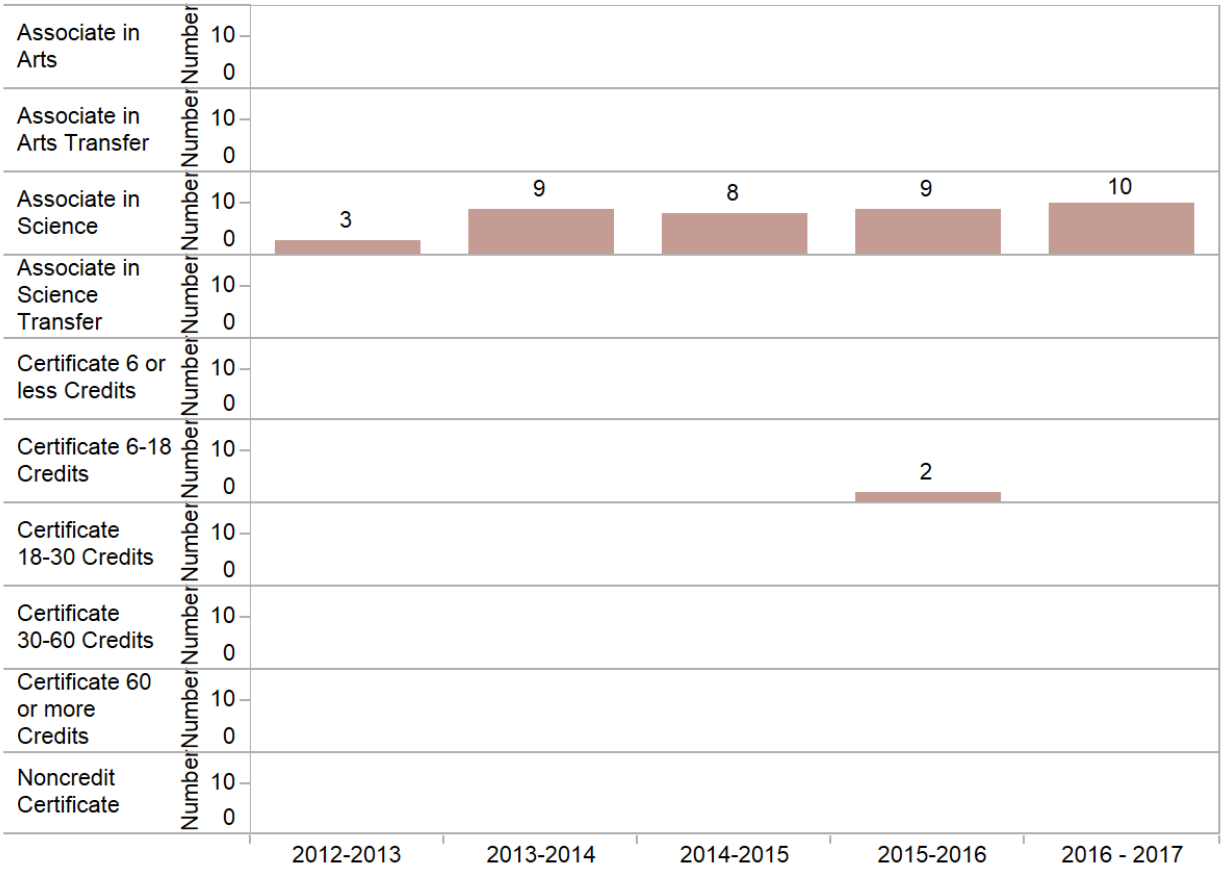
SLOCCCD Program Review Data: Degrees and Certificates Awarded

Program: Computer Information Systems

Award Type: All

Program Awards

Top Code Description(s): Computer Information Systems
Award(s): All

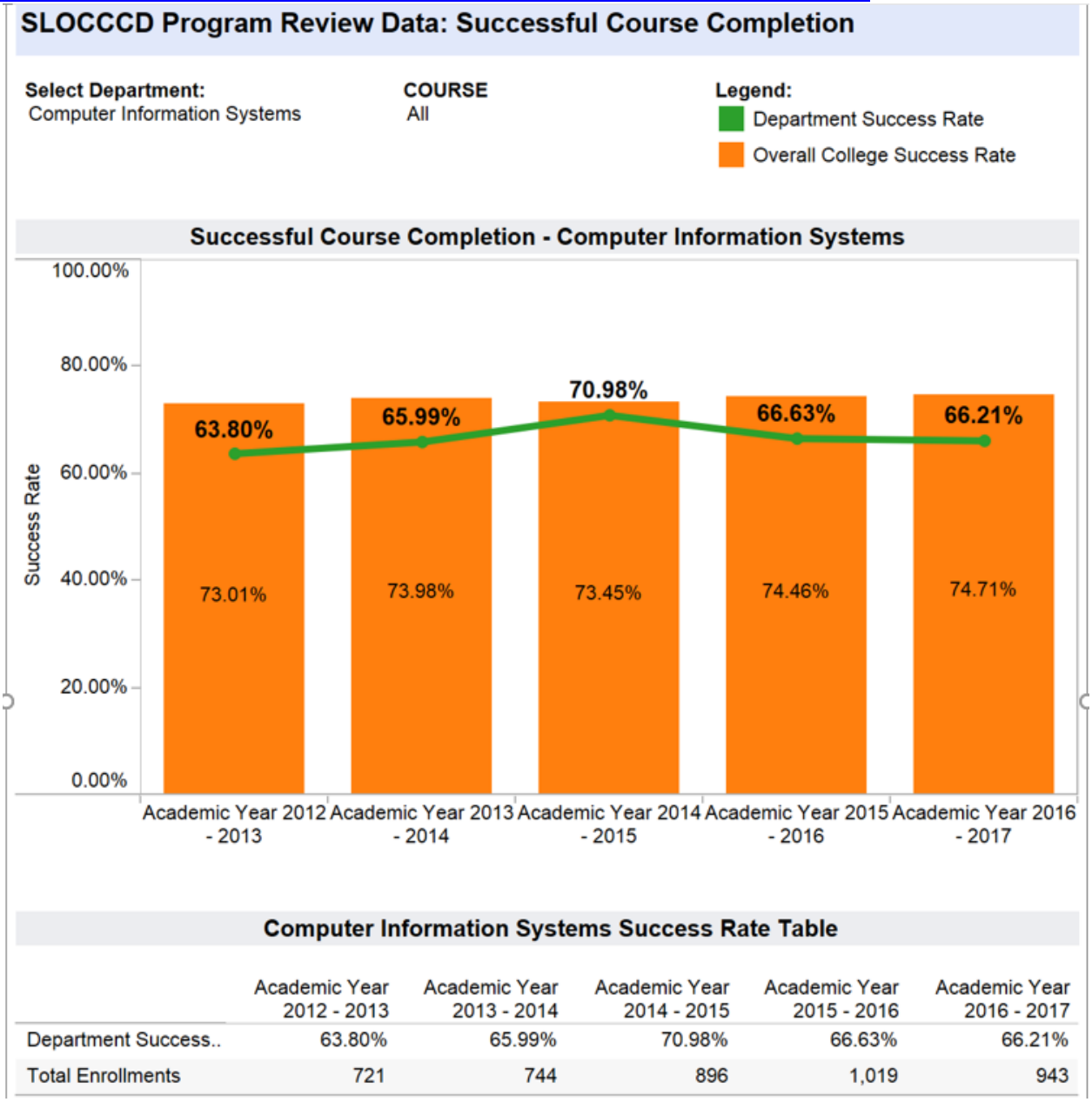


Program Awards Table

Award T..	Award	2012-2013	2013-2014	2014-2015	2015-2016	2016 - 2017
Associate in Science	Computer Science (AS)	3	9	8	9	10
	Total	3	9	8	9	10
Certificate 6-18 Credits	Android Developer (CS)				2	
	Total				2	
Grand Total		3	9	8	11	10

Program Awards: The number of degress and certificates awarded by program type

General Student Success – Course Completion (Insert Aggregated Data Chart)



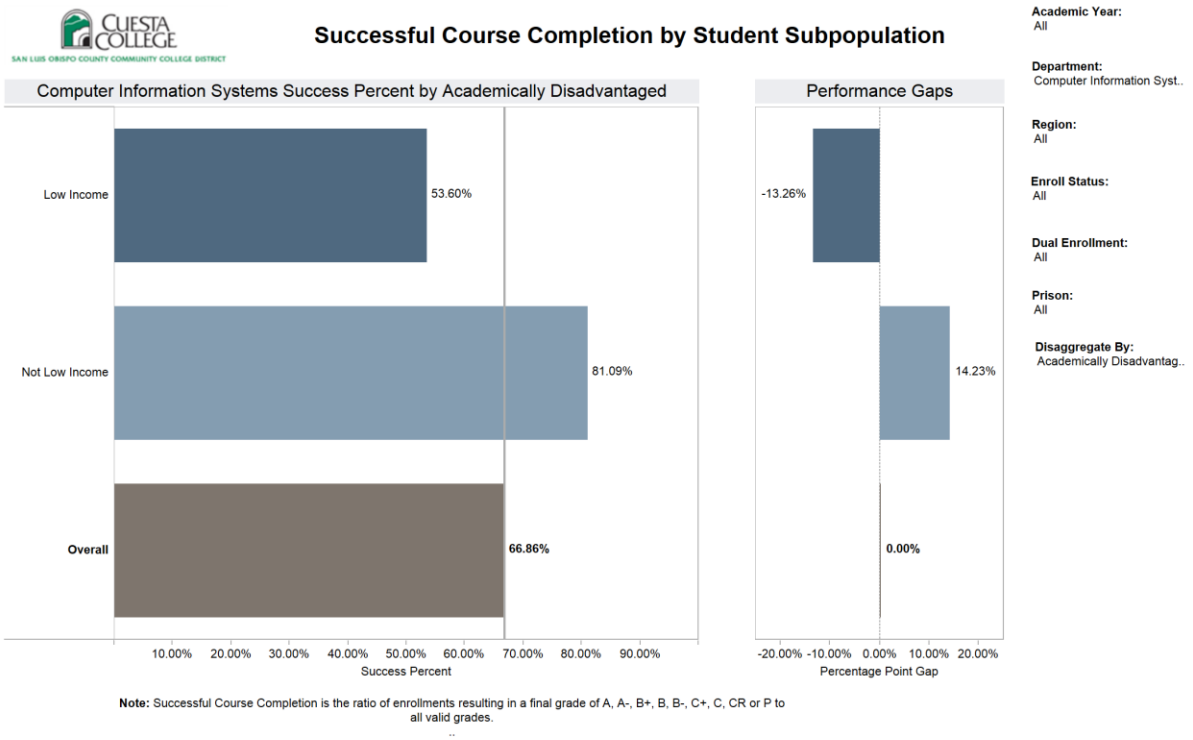
Computer Information Systems Success Rate Table

	Academic Year 2012 - 2013	Academic Year 2013 - 2014	Academic Year 2014 - 2015	Academic Year 2015 - 2016	Academic Year 2016 - 2017
Department Success..	63.80%	65.99%	70.98%	66.63%	66.21%
Total Enrollments	721	744	896	1,019	943

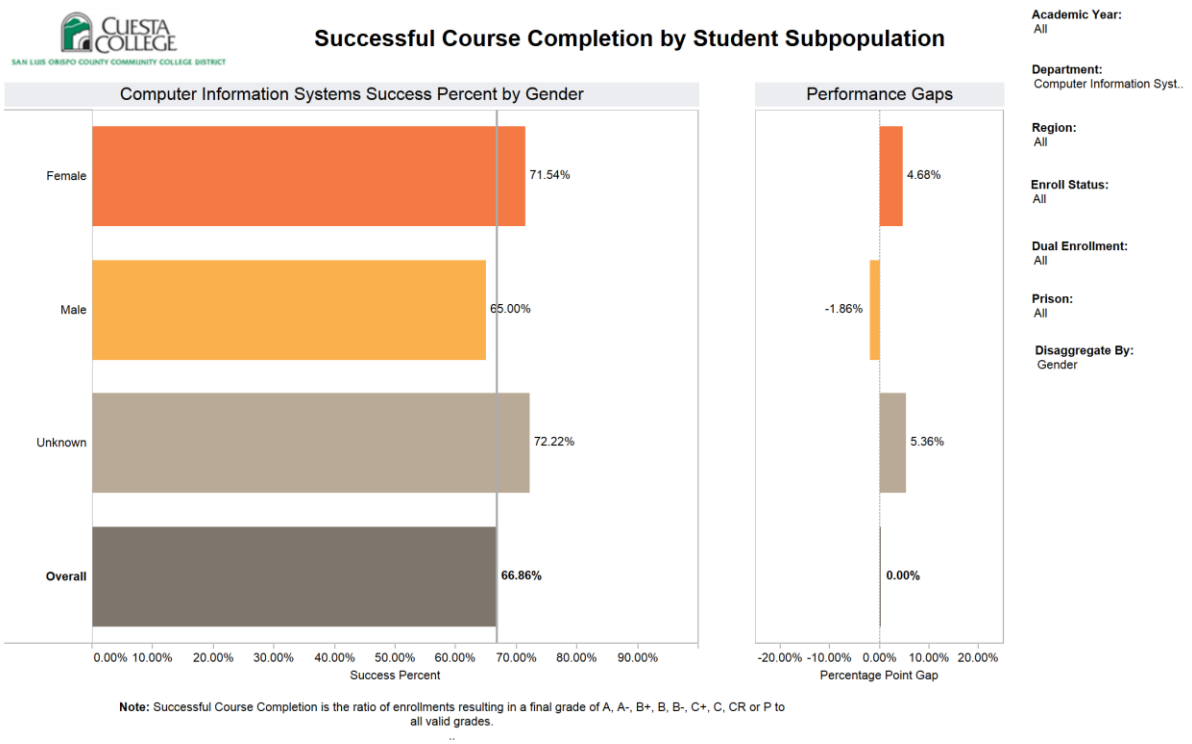
Student success has remained constant and is unlikely to be one of the higher programs in the college given its difficulty. Another factor at play is that many students have never had a course in this discipline before and may be less likely to persist given their unfamiliarity. The discipline is very popular right now in part due to the very strong employment prospects and as such may attract a significant number of people who are unfamiliar with the demands of the field.

It would be interesting if data were available that could account for students who did not complete a course the first time but came back and subsequently completed the course. Anecdotal evidence shows that some students will drop a course and return later better prepared and motivated.

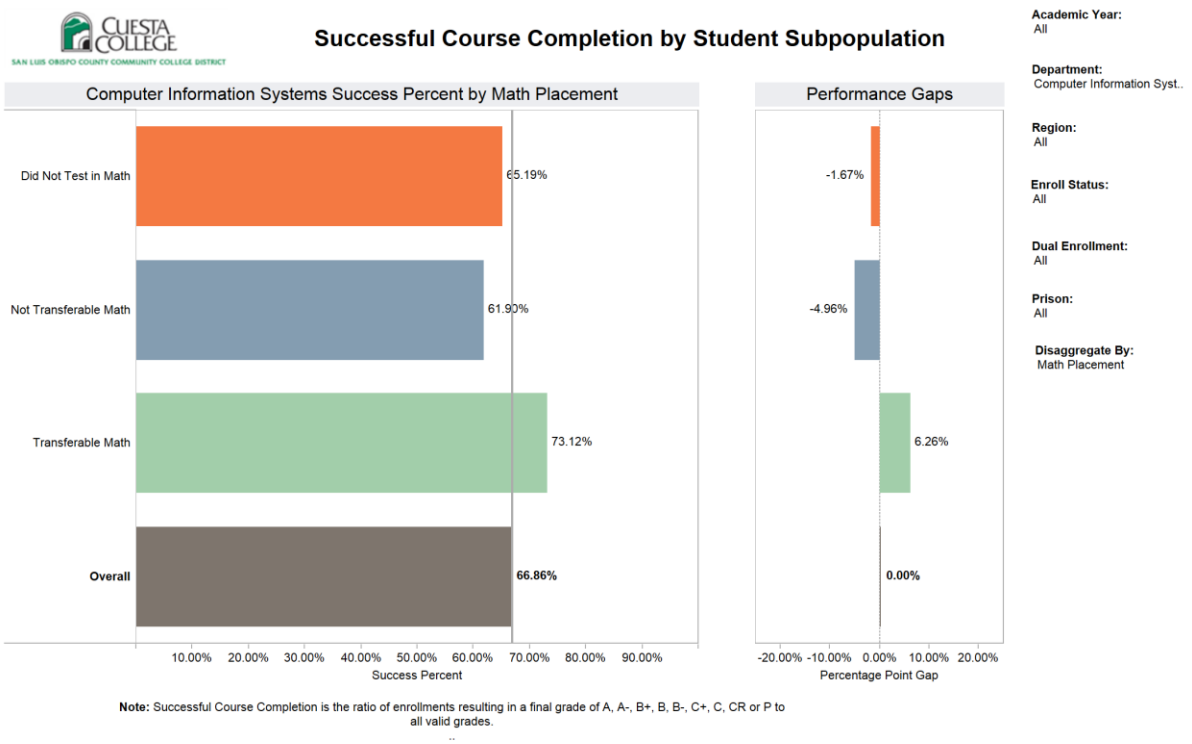
Review the Disaggregated Student Success charts; include any charts that you will reference.



The breakdown by income is very close to the overall college population. It is our hope that we will continue to attract students of all backgrounds, especially since our program provides a great deal of opportunity for students looking to improve their financial standing.



The breakdown by gender is very encouraging. The field has been struggling to attract females to the discipline and the workforce. Female students have been performing above the mean. We have worked to find ways to foster more women in our program and any additional initiativse would be welcome. The program has a disproportional number of female instructors and this is likely benefitting the program and encouraging students to continue.



The Math Placement numbers show that students who are properly prepared for the field do well. The discipline is very quantitative and the A.S. degree requires calculus so some math proficiency is necessary. Students who are capable of transfer-level math exceed expectations.

OTHER RELEVANT PROGRAM DATA (OPTIONAL)

Provide and comment on any other data that is relevant to your program such as state or national certification/licensure exam results, employment data, etc. If necessary, describe origin and/or data collection methods used.

PROGRAM OUTCOMES ASSESSMENT CHECKLIST AND NARRATIVE

CHECKLIST:

☒ SLO assessment cycle calendar is up to date.
☒ All courses scheduled for assessment have been assessed in eLumen.
☐ Program Sustainability Plan progress report completed (if applicable).

NARRATIVE:

Briefly describe program changes, if any, which have been implemented in the previous year as a direct result of the Program or Student Services Learning Outcomes Assessment. *If no program changes have been made as results of Program or Student Services Learning Outcomes Assessment, indicate: NONE.*

NONE.

PROGRAM PLANNING / FORECASTING FOR THE NEXT ACADEMIC YEAR

Briefly describe any program plans for the upcoming academic year. These may include, but are not limited to the following: *(Note: you do not need to respond to each of the items below)*. *If there are no forecasted plans for the program, for the upcoming year, indicate: NONE.*

A. New or modified plans for achieving program-learning outcomes.
NONE.

B. Anticipated changes in curriculum, scheduling or delivery modality.
NONE, though we will investigate the feasibility of offering more courses fully online.

C. Levels, delivery or types of services
NONE.

D. Facilities changes:
NONE anticipated.

E. Staffing projections:
We are losing one of our two full-time instructors to retirement at the end of this year. Historically we will likely lose part-timers due to low pay relative to industry, better teaching opportunities (Cal Poly offers better pay and more load for temporary faculty), and industry advancement. It is especially challenging to find part-timers who can teach during the day, when demand is high. We also have a limited number of faculty available who can teach the core courses for the degree. We will continue to have these issues unless a full-time instructor is added.

F. Other